HQ CIVIL WORKS ENGINEERING NOTES

Volume III Number 5 **9 February 1998**

This Month's Contents

Notes from Steve Stockton, Chief, Engineering Division

The President's budget request for Fiscal Year 1999 was sent to Congress last week. There is a large discrepancy between the Fiscal Year 1998 appropriation amount and the Fiscal Year 1999 budget request. Our Fiscal Year 1999 recommended amount was also larger than the budget request. These differences clearly place the Civil Works program in the national debate between the Administration and the Congress over the appropriate level of Federal investment in water resources infrastructure. This situation also presents a number of management challenges for our Engineering program. Prior to making adjustments to the current year program because of future budget request, each Engineering chief should work closely with your Deputy for Programs and Project Management to determine the best course of action. Also, quick response will be required to requests for information from Programs personnel between now and the budget hearings in late March. As I receive additional information on the budget/appropriation actions I will share it with you. [Stockton, (202) 761-0215 or (202) 761-0115 while in Planning]

CURRENT NEWS FROM CWE

International Day of Action Against Dams and Rivers, Water, and Life

The Corps of Engineers has received information from multiple sources concerning possible demonstrations that may occur on or about March 14, 1998 as part of the "International Day of

Action Against Dams and for Rivers, Water, and Life." Corps facilities have not been targeted to our knowledge and it is important to note that this information is preliminary and has not been analyzed, therefore we are unable to make any predictions at this time. The HQ Provost Marshall is coordinating the information with the FBI Domestic Terrorism Branch and Military Intelligence. A Criminal Intelligence Bulletin will be produced and disseminated to the field once the information is analyzed. Any field office that receives any information concerning possible actions at their facility forward the information to their District Security office as quickly as possible. [LTC Miller, (202) 761-8725]

Corps of Engineers 1998 Heartland Technology Transfer Conference

The Joint Engineering Technology Transfer Conference has been renamed the Corps of Engineers 1998 Heartland Technology Transfer Conference. The Kansas City District is handling the physical arrangements for this conference and promises to provide an outstanding setting for the June 1998 meeting in Kansas City. As Mr. Stockton explained in the October 1997 joint memorandum the conference combines the Water Quality/Environmental, Dam Safety, and Mechanical/Electrical conferences into a single meeting. All such functions should be represented at this conference. This is a very important conference with the opportunity not only to share information and experiences but also to help HQ Engineering Division direct the dramatic structural and cultural changes the Corps is undergoing. All Engineering, Planning and Operations chiefs with personnel work in these areas are encouraged to support the conference and ensure appropriate attendance by your staffs. [Juhle, (202) 761-8512; Bank, (202) 761-1660; Wu (202) 761-8614]

Cost Engineering

Engineering Instructions (EI) 01D010, Construction Cost Estimates, has been approved for release and immediate implementation by all US Army Corps of Engineer Divisions, Districts, and field operating activities. It is a combined civil works and military programs “technical how to develop the cost details document” for preparing construction cost estimates. It specifically updates only Appendices C, D, F and G of Engineer Regulation (ER) 1110-2-1302, Civil Works Cost Engineering and Technical Manual (TM) 5-800-2, Cost Estimates Military Construction.

EI 01D010 is distributed in electronic media only and is available at the following location: **http://www.hnd.usace.army.mil/techinfo/ei.htm**. Points of contact for questions concerning this EI are Mr. Jim Mulford, (202) 761-4659 (Civil Works) or Mr. Miguel Jumilla, (202) 761-1359 (Military and Environmental). [Braden, (202) 761-1495]

USACE Specifications Steering Committee (CSSC)

The Civil Works Specifications Steering Committee has combined its efforts with Military Programs and has changed its name to **"USACE Specifications Steering Committee (CSSC)".** A CSSC Meeting was held 22-23 Jan 98 in Arlington, TX. The purpose of the meeting was to discuss strategy for combining Civil Works and Military Programs guide specifications (CEGS/ CWGS) into a single database to be maintained under a consolidated Notice Program (NP). The merger of the MP and CW specifications policy ERs was also discussed. As a result, CWGS will be renumbered as CEGS in accordance with the revised CSI MasterFormat and in coordination with the two existing Notice Program Managers and appropriate HQ Proponents. This effort will be completed this fiscal year at existing funding levels. A draft joint ER will also be circulated for review and comment prior to the next CSSC Meeting, which is tentatively scheduled during the first week of April. [Baldi, (202) 761-8894]

HQUSACE Notification Plan for Civil Works Structures in Distress

Appendix A of ER 1110-2-101 (*Reporting of Evidence of Distress of Civil Works Structures)*, dated 15 March 1996, is a HQUSACE notification plan. It includes the names and office and home phone numbers of key Headquarters personnel to be contacted if any evidence of distress or potential failure of civil works projects is experienced. The primary contact is the HQUSACE Dam Safety Officer (Steve Stockton). If the DSO cannot be reached, the reporting office follows the notification sequence in the Appendix.

An updated Appendix A will be furnished to dam safety coordinators this month as an interim measure until the ER is formally updated. We plan to update the regulation later this year. [Bank, (202) 761-1660]

Major Rehabilitation Workshops

Headquarters, in conjunction with CEWES and CEWRC-IWR, has been sponsoring Major Rehabilitation Workshops for a number of years. Last fiscal year two workshops were held for District/Division teams. Purpose of the workshops is to bring together District teams with the HQ staff members who will eventually review any report submitted. The workshop features instructors from Engineering, Operations, Planning and Policy, who provide the students the background and guidance considered necessary for successful rehabilitation reports. The latest reliability analysis methodologies are presented, as well as the thresholds and other requirements that a rehabilitation evaluation report must meet. District teams should be prepared to present an overview of a project in their District that is being considered for rehab. Informal discussions about these projects are encouraged. All Districts with potential rehabilitation projects should consider sending a team to a workshop. For more information, or to indicate interest, contact Mary Ann Leggett, CEWES, at (601) 634-2724, or Bruce Riley, CECW-ED, (202) 761-8597. [Riley, (202) 761-8597]

Senior Executive Service Announcements

The Chief of Engineers has announced approval of two selections to the Senior Executive Service (SES).

Ms. Pat Rivers has been appointed to the position of Chief, Environmental Restoration Division, Directorate of Military Programs, HQUSACE. Ms. Rivers is currently the Assistant Deputy Under Secretary of Defense for Cleanup with the Office of the Deputy Under Secretary of Defense for Environmental Security. Previous assignments include Head of the Environmental Branch, Office of the Inspector General, DOD, and Environmental Engineer for the Department of the Navy. Ms. Rivers has a BS degree in Civil Engineering from Worcester Polytechnic Institute, and is a Registered Professional Engineer.

Ms. Barbara Sotirin has been appointed to the position of Director, Cold Regions Research and Engineering Laboratory. Ms. Sotirin is currently a Staff Specialist with the Office of the Under Secretary of Defense (Acquisition & Technology), Naval Warfare Office. Prior to this, for seven years, she was U.S. Project Manager, Technical Coordinator and Chief Scientist of Project Spinnaker, a joint US/Canadian Arctic research and development program. Dr. Sotirin obtained a Ph.D. in Electrical Engineering from the University of California, San Diego in 1989.

Work is continuing on the efforts to fill six SES vacancies at our Division offices. These included two Directors of Engineering and Technical Services (CEMVD and CEPOD) and four Directors of Programs and Project Management (CELRD, CENAD, CENWD, and CESAD). The interview panel for these positions meets 23-24 February 1998. The Chief of Engineers will interview the candidates during the 25-27 February 1998 time frame.

The announcement for the Chief, Planning Division, Civil Works Directorate, HQUSACE, closed on 9 February 1998. Two recruit plans will soon be forwarded to the Chief of Engineers for the Chief Counsel's position and the Director, Center for Public Works position.
[Pearre, (202) 761-4531

CWE INFORMATION

El Niño and the Coming Spring

A great deal of fanfare has surrounded the reports of El Niño this year, and many of us are tired of hearing about it. Unfortunately, its presence, coupled with the recent turnover of staff throughout the Corps, could result in serious impacts on our flood control reservoirs.

The El Niño, which began in the summer of 1997, is turning out to be one of the largest on

record. Based on current conditions in the tropical Pacific, increased storminess and wetter-than-normal conditions are expected over California and the southern tier of the United States, with warmer-than-normal conditions along the northern tier of states. The NRCS Snow Precipitation update for late January 1998 indicates that many areas in the west now have greater than average snowpack.

As Corps Dam Safety Officer, I want us to continue to do everything possible to ensure continued safe operation of our dams despite the increased flooding threat El Niño may present during the spring runoff season. If you have not already, I strongly urge you to ensure that contingency plans are in-place for essential dam safety activities, including the surveillance, monitoring and evaluation of all of our dams.

This is not a directive to prepare contingency plans but I would be interested in seeing a copy of any plans you have prepared in this regard. As always, my staff remains available to assist you in any dam safety activities. [Stockton, (202) 761-0215]

DID YOU KNOW

Levee Vegetation Management Policy

Section 202(g), Water Resources Development Act of 1996, requires the Sectary of the Army to undertake a comprehensive review of the current levee vegetation policy. The review is to be completed in cooperation and consultation with interested federal agencies, state, local and tribal governments and the public. If necessary the revised policy is to include guidelines addressing regional variations in levee management and resource needs. The vegetation policy revision should include the interests of flood control, preservation of natural resources, protection of the rights of native Americans, and other considerations.

To comply with WRDA 1996, the Corps has conducted two regional internal meetings; one in Kansas City, Missouri, 7-8 October 1997, and the other in Seattle, Washington, 15-16 October 1997. A meeting with other federal agencies seeking their input was held in Portland, Oregon, in December 1997. Three future meetings to seek input from state, local, and tribal governments and the public are planned in March 1998.

The current vegetation policy for funding eligibility of non-federal projects under Public Law 84-99 is found in Engineer Regulation 500-1-1. Design guidance on levee vegetation is found in Engineer Manual 1110-2-301. Both of these documents will be reviewed and revised with the input of the above meetings based on the following criteria:

1. The safety, structural integrity, project performance, accessibility for inspection and

floodfighting, and maintenance shall not be compromised.

2. There will not be a broad regional vegetation policy but rather the vegetation allowed will be evaluated, by a team of multi-disciplined members, on a project by project basis as long as it meets vegetation criteria for Corps projects. [Bianco, (202) 761-8509; Chang, (202) 761-0419]

Performance Parameters for Embankment Dams and Foundations

The Geotechnical and Materials Branch is refining the process now being used to evaluate the performance of our embankment dams and foundations with respect to the full range of loading. The process will use formal “Performance Parameters” for each embankment dam. These parameters are developed and based on project requirements, design criteria, site condition, and construction and operation history. Performance parameters will be the basis for establishing and updating the observation, surveillance, and monitoring plans, preparing and updating the emergency identification and response plans, establishing threshold levels, and identifying the range of unsatisfactory performance. They will be established for each project to monitor and measure the response of the dam and foundation and will be the basis for evaluating the significance of a change in response to new loading. Performance parameters will provide the basic input for both conventional evaluations and risk assessments. Guidance on the development and appropriate use of performance parameters for evaluating embankment dams and foundations will be published in June 1998. [Branch, (202) 761-0208]

GIS Data Available (LandView III)

A new Government GIS viewer product called LandView III was just released in January 1998. LandView III, a product of the Bureau of the Census, is a "Community Right-to-Know" software tool, which includes database extracts from EPA, Census, USGS, NRC, DOT and FEMA. It includes a wealth of data including Jurisdictional Boundaries (including States, Counties, Cities, Congressional Districts, etc.), Neighborhood Maps (highways, streets, water, dams, etc.), Demographic Statistics, and Environmental Data (including HTRW sites, Toxic Release Inventory, Watershed Assessment, Air Quality Monitoring, etc.). This has the potential to be an excellent, low cost tool to simplify the data collection and basic processing for reconnaissance studies and environmental documents.

USGS and EPA are working to include even more data in future updates (to be published on Digital VideoDisc, an ultra-high volume storage medium). For example, we have just furnished the Corps' Digital Project Notebook so in the next update they can include all Corps projects. The LandView III package includes a basic GIS viewer, but it is most valuable for the data, some of which could be used with other existing GIS systems. LandView III is relatively easy to use, and is designed to be self-taught. You can also query and sort the data using the software.

The viewer and one county's worth of data can be downloaded free from the Internet. You can purchase the set of 11 CDs covering the entire U.S. for $549 or a single CD for $99. One disc covers most of a typical district. LandView III runs in Windows 95. For more information, or to order, visit the Census TIGER web site at: "**http://www.census.gov/geo/www/tiger"** or call the bureau of the Census at (301) 457-4100. To download the software and one county of information (through the "Right to Know Net"), visit: "**http://rtk.net/landview"**.
[Bank, (202) 761-1660]

Portugues Dam, Ponce, Puerto Rico

Mike Klosterman, Chief Geologist, CECW-EG, had the opportunity to spend significant time at the project as the invited guest of the Jacksonville District. Several days were spent inspecting the project area including left abutment excavation, drilling & grouting, foundation preparation & mapping, and the test quarry area. The single most impressive observation was the speed with which the Government grout team had remobilized after being idled for more than a year due to Corps funding delays. The production drilling is being performed entirely by in-house geologists, engineers, and drillers. This argues well for the timely completion of this phase of construction.

The most innovative feature observed was the District's integration of computer technology into the grouting program. The advent of the laptop computer has given field grouting professionals the ability to control grouting production quality and costs to an extent never before achieved. The ease of data entry and retrieval and the sophistication of the program far exceed that possible using hand-held computers or manual data analysis. The computer program was developed by CESAJ-EN-G personnel (POC Gary Holem, 904-232-2491) and is available in the Microsoft Access format which can be easily converted to Excel if you don't have Access. This is an excellent example of using technology to improve quality and production while using less time, effort, and personnel. It should be given the widest possible dissemination and encouragement throughout the Corps, our sister Federal agencies, and the private sector.

Other innovative aspects of the grouting construction include the widespread yet selective use of specific microfine cement, the exclusive use of percussion drills with vacuum adaptations, and the rail transportation of the drilling platforms. Past Corps guidance has discouraged the use of percussion drilling for production grouting. The results will impact future Corps policy.

Another positive characteristic of the project was the outstanding cooperation that existed between Engineering and Construction Division. There appeared to be a seamless flow of information between the two organizations both in the field and in official documents and meetings. This has led to excellent coordination with the Contractor and a high quality of construction with fewer delays and hopefully fewer claims. Dr. Edward Middleton, Chief of Engineering, CESAJ, attributes this to the CESAJ Engineering-Construction partnering

agreement, which could serve as a Corp-wide model. [Klosterman, (202) 761-8682]

Dworshak Dam Foundation Grouting

The Dworshak Dam remedial foundation grouting has been successfully completed. A Request For Proposal (RFP) type construction contract was awarded in May 1997, and remedial foundation grouting was accomplished between mid August and early December 1997. The grouting was required due to excessive foundation seepage and continued foundation bedrock erosion under monoliths 15 through 19 in the left abutment. Dworshak is a very high head structure, which created several challenges during the foundation grouting. Reservoir head in the gallery within the grouted monoliths ranged from about 150 ft. at monolith 15 to 350 ft. at monolith 19.

In order to reestablish a grout curtain under monoliths 15 through 19, all of the foundation relief drains in this area had to be grouted. Replacement relief drains were then drilled after successfully completing the multi-row remedial grout curtain under a portion of each monolith. All foundation grouting was accomplished using a cement grout. To reduce risk of excessive uplift pressure under the dam, the reservoir level was held 100 feet below full pool until the new relief drains were reestablished.

The remedial curtain grouting has resulted in a remarkable reduction in foundation seepage and in foundation uplift pressure. Foundation seepage has been reduced from about 1000 gpm to near 0 gpm at full pool elevation, and foundation uplift pressures have reduced to lower levels than they were prior to the grouting. The uplift and foundation seepage will be monitored through refilling of the reservoir to evaluate the effectiveness of the grouting. [Klosterman, (202) 761-8682]

YOU ASKED

The Project Management regulation is still under development. The leaders of all the functional areas in Civil Works and Military Programs have been fully involved in the discussions on the regulation. An example of some of the comments that are being considered is included in Appendix A for your information. We are still holding the previous question on project management until the regulation is finalized and a more specific answer can be furnished. [Pearre, (202) 761-4531]

EM 1110-2-2902, Conduits, Culverts, and Pipes

Question: When will the new EM 1110-2-2902 Conduits, Culverts and Pipes, dated 31 Oct 1997 CH 1-3 might be posted electronically on http://www.usace.army.mil/inet/usace-docs/eng-manuals/em.htm?

Answer: CEIM tells us that it's listed to be posted and is with the person doing the posting. She has loads of documents to post and is working as fast as possible to get things posted. No specific date for this document can be provided. Some of the documents have to be scanned because we do not have electronic files for each publication. Hopefully it won't be too long. [Baldi, (202) 761-8894]

Questions are needed by the 15th of the month for the next issue of HQ CIVIL WORKS ENGINEERING NOTES. Questions can be sent by FAX to (202) 761-4002 or by e-mail to Charles Pearre. [Pearre, (202) 761-4531]

DAM SAFETY PROGRAM

Dam Safety Agenda for the Corps of Engineers 1998 Heartland Technology Transfer Conference

We are in the process of finalizing the agenda for the dam safety sessions at the Corps of Engineers 1998 Heartland Technology Transfer Conference. A copy of the preliminary agenda is provided in Appendix B for your information. Look for a memorandum during March with more information about the conference including agenda, registration fee, and lodging information. [Pearre, (202) 761-4531]

Stilling Basin Damage

The following two examples of why stilling basin dewaterings are required are provided for your information. Both of these instances occurred in the Southwestern Division.

1. During the periodic inspection of Canyon Dam, Texas on 28-30 January 1998, the outlet works stilling basin was dewatered and inspected. Erosion of the bottom slab has continued in areas between the end sill and the second (downstream) row of baffle blocks to the extent that repairs are considered necessary. A survey completed during the inspection showed between 0.7 and 1.1 foot of concrete has been eroded. A survey taken during the1987 dewatering inspection indicated that 0.4 to 0.5 foot had been eroded at that time in the same area. The Fort Worth District will accomplish a design and cost estimate, and then pursue reprogramming funds so that repair can be done.

2. On 3 February 1998, Fort Worth District personnel inspected the dewatered Waco Dam outlet works stilling basin. Damage to the basin was observed. In the entire (28' x 60') area between the end sill and the rear row of baffle blocks, 6 to 8 inches of concrete has been eroded and almost all of the top (transverse) layer of rebar has been exposed. The District cut off and removed all the loose rebar to minimize additional damage. Some rebar was also exposed between the two

rows of baffle blocks as well as in front of the front row of baffle blocks.
There was also some damage to and around the baffle blocks. During the 1984 dewatering, 3 to 4 inches of concrete had been eroded and some loose rebar was removed. This basin is a "U" frame structure, so removal of the top layer of rebar definitely has reduced the structural integrity of the basin. Fort Worth Engineering Division is working with Operations Division for preparing a plan of repair to be sent forward with a request for funds. [Pearre, (202) 761-4531]

ASDSO Conference Call for Papers

The Association of State Dam Safety Officials (ASDSO) 1998 Dam Safety Conference will be held 11-14 October 1998 at the Riviera Hotel, Las Vegas, Nevada. ASDSO has issued a call for abstracts and award nominations. Abstracts are due to ASDSO by 6 March 1998 and award nominations are due 30 June 1998. A copy of the forms to submit abstracts has been sent to all District and Division Engineer Chiefs along with a memorandum encouraging submission of papers and participation in the conference. Additional information can be obtained from ASDSO by calling (606) 257-5140. [Bank, (202) 761-1660]

USCOLD Annual Meeting and Lecture

This year's USCOLD Annual Meeting and Lecture will be held from 10 - 14 August 1998 in Buffalo, New York. The lecture will be for two days include a session (1/2 day) on public awareness, two sessions on dam safety to include risk assessment and one session on performance monitoring of dams and foundations. Attendance by Dam Safety personnel is encouraged, since the topics are timely and USACE personnel will make several presentations. [Walz, (202) 761-8681]

FIELD INFO TO SHARE

El Niño and South Pacific Division

Jack Farless, Chief, Engineering Division, in response to a message from Steve Stockton on this subject provided the following information.

"As you might guess, we have been extremely proactive in planning for El Niño flooding events. I have attached a summary of the emergency management activities we have taken and continue with weekly or in some cases daily reviews and updates. In September 1997, the Division Commander directed each District Commander to prepare a 1997/98 Storm Plan of Action. They have been reviewed by the SPD staff and modified where appropriate."

"We have close coordination with the State of California Department of Water Resources,

Division of Safety of Dams and the Bureau of Reclamation on the Section 7 Dams. We know our facilities and the on site maintenance personnel are trained in dam safety procedures and in daily contact with the District offices."

"In short, as the result of the 1997 storms, our districts are well prepared. I hope this meets your needs."

Seattle District Wins EPA Internal Team Work Award

Michael L. Bevens of the Seattle District forward the following "Good News" about the Seattle District:

"EPA has selected the Seattle District- Corps of Engineers Wyckoff Barrier Wall Team to receive their internal teamwork award for Superfund. It is the first time EPA has selected a team outside of its own agency for this award. This award is in recognition of the superb work you've all contributed to the project management, field investigation, conceptual design, cultural resources support, and coordination of the 404(b)(1) for the BARRIER WALL. EPA is especially pleased that the Corps was able to get the EPA RPM's together on the "same sheet of music" with its ability to see how activities for the separate operable units at Wyckoff/Eagle Harbor impact each other."

Rock Island District Recruitment

Gary Loss, Chief, Engineering Division, Rock Island District, provided the following announcement for distribution to all engineer organizations:

"The Rock Island District is in the process of filling Chief's position in the Structural Section of their Engineering Division at Rock Island.

The position is being advertised through the CP-18 Web Site address: **http://www.hq. usace.army.mil/ cehr/c/announce/ri9810.htm**. Those interested should submit their application postmarked prior to the 20 February 1998 closing date. If you should have questions, feel free to call me at 309/794-5226 or the Chief, Design Branch, Dale Rossmiller, at 309/794-5261.

The Rock Island District has the second largest number of locks and dams within the Corps. We ride ourselves in maintaining a strong structural engineering staff capable of working on a diverse program. More than 90% of our engineering staff are registered. Rock Island, Illinois, is located on the Mississippi River. The Quad Cities is a prospering area of 350,000 people made up of several communities on both the Iowa and Illinois sides of the river. Thank you for your assistance."

Districts are encouraged to submit information for this section. Also, tell us your ideas on how HQ CWE can do it better and what you would like to know about. Your information is needed by the 15th of the month for the next issue. [Wallace, (202) 761-8890]

REMINDER

These HQ Civil Works Engineering Notes are now available on the Internet. You can the access the Notes directly at "**http://www.usace.army.mil/inet/functions/cw/cecwe/notes/**".